



***POLAR TEMP***  
**ICE TRANSPORT with TRAILER, TRUCK  
BODY, and PALLET LOAD SERIES  
INSTALLATION, OPERATION, &  
MAINTENANCE MANUAL**

Model: 3' x 7'  
Model: 4' x 8'  
Model: 4' x 8' Super Sized  
Model: 5' x 9'  
Model: 5' x 10'  
Model: 7' x 12'  
Model: 7' x 16'



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## **DISCLAIMER**

Polar Temp is committed to continuous material and product improvements. This manual is subject to modification without notice without incurring responsibility for previously sold merchandisers and components.

Thank you for purchasing from Polar Temp.

## INSPECTION AND UNPACKING:

Polar Temp Ice Transport (IT), Truck Bodies (TB) and Pallet Load (PL) units are individually inspected and carefully packaged to ensure each unit arrives without damage.

- Upon receipt, **immediately inspect** the units for any evidence of shipping damage **while the delivery truck driver is there**. If the unit is damaged, **document damage on the bill of lading** and give the driver a copy. Notify the delivering carrier immediately and request a damage inspection and claim. Polar Temp is not responsible for damage to the unit during transit. A unit damaged in transit is the delivering carrier's responsibility.
- Remove the wood shipping base and other protective materials. First, carefully cut the steel bands that extend around the top and through the shipping base area. After removing the bands, again be careful as the remaining wood protective material is removed from around the unit. The wood protective material at the front and rear of the unit should be removed prior to the top material. Be aware that the top protective material could fall. Ask for help, as this material is being removed. Finally, remove the plastic protective wrap from the unit.

## INSTALLATION

Carefully raise the unit into position with a forklift or other safe device rated to lift the load and slide it into the pickup box, trailer or pallet load location. Approximate weight of the model 3' x 7' is 700 lbs., model 4' x 8' is 1200 lbs., model 5' x 9' is 1500 lbs., model 5' x 10' is 1700 lbs, model 7' x 12' is 2000 lbs and model 7' x 16' is 2500 lbs.

- The mobile unit, whether it be a trailer or pickup truck should be strong enough to support the unit with a load of ice. Be sure to check the load capacity of the mobile unit prior to installing the box on it.
- It is essential that auto-defrost models be parked on a level surface to allow defrost water to drain properly. If defrost water does not drain, it will freeze in the drain pan which can eventually cause the fans to seize.
- Auto-defrost models should be parked to prevent the evaporator drain hose from being kinked or hose opening from being obstructed.
- Adequate space should be allowed around the exterior walls of the unit to allow for evaporation of any condensation that may occur on exterior surfaces.
- The units should be located in a shaded area away from direct sunlight for the most economical operation. . Good ventilation for the refrigeration system is required. **DO NOT BLOCK AIRFLOW TO THE CONDENSING UNIT.**

- A minimum 115-Volt, 15 or 20 Amp grounded power source should be provided within a range of the power cord. **USE ONLY PROPERLY SIZED EXTENSION CORDS. A 12 GAUGE MINIMUM CORD IS RECOMMENDED, BUT PROPERLY SIZED CORDS DEPEND ON THE LENGTH OF TRAVEL FROM THE POWER SOURCE TO THE UNIT.**

## OPERATION:

### Electrical:

The electrical power supplied to the unit must be as identified on the serial number data plate located on the inside the unit. Electrical service connections must be in accordance with the National Electrical Code, state code and any local codes that may apply. All units are equipped with a power cord and a 3-prong plug. **WARNING: Improper use or removal of the grounding plug can result in a risk of electric shock!**

Be sure to use a grounded electrical receptacle with a fused circuit sized correctly for the electrical load. Extension cords may decrease the voltage to the unit and ultimately cause the compressor or other component failure. The unit data plate indicates the recommended maximum overcurrent protective device size.

Note: Some outdoor locations require ground fault interrupt (GFI) outlets. These outlets may trip upon condensing unit start. Refrigeration equipment is exempt in some areas from GFI requirements. Local electric codes should be checked.

This units require 120-volt ac and a 20-amp breaker. The unit was shipped with a 10 gauge, 25 foot, 3 conductor power cord. If you require a longer cord, it should be of heavier gauge per the chart below.

<u>Cord Length</u>	<u>Minimum Wire Size</u>
Up to 50 feet	10 AWG
Up to 100 feet	8 AWG
Up to 150 feet	6 AWG
Up to 200 feet	4 AWG

Using a power cord of inadequate size can result in hard starting, inefficient operation and shortened compressor life.

**Start Up:**

Plug the unit power cord into the properly sized electric receptacle outlet. Turn the power on-off switch to the ON position. The condensing unit will start and continue to operate until air temperature inside the storage space reaches +10 to +20 degree F.

To stop refrigeration of the transport turn the power switch to the OFF position.

**Temperature Control:**

The unit temperature is maintained by a thermostat that cycles the condensing unit on and off automatically. On auto-defrost (AD) models, the temperature control is located in the control box near the condensing unit housing. On cold wall (CW) models, the temperature control is also located in the control box near the condensing unit housing.

The temperature is adjusted by turning the thermostat control knob clock-wise for colder temperature and counter-clockwise for warmer temperatures. Turning the control knob fully counter-clockwise will shut power off to the compressor. **DO NOT** re-adjust the internal adjustments of the thermostat without consulting Polar Temp.

**Loading the unit with bagged ice:**

**After** the IT is operating at required temperature, load it with bagged ice. Bagged ice should **NOT** be stacked such that it will obstruct air flow in automatic defrost blower coil. Cold wall units should have ice stacked to allow open-air access to thermostat sensor at upper rear interior. Approximately 3" needs to be clear from top of stacked ice to top of inside interior for effective refrigeration and ice storage.

**MAINTENANCE:**

**Refrigeration: WARNING – disconnect electrical power before cleaning.** Clean refrigeration cover grill openings, condenser fins, and condenser fan blades at least two (2) times per year, more often if needed. A dirty condenser will cause the refrigeration system to become less efficient, and may lead to compressor failure. Clean the evaporator coil and fan blades on auto-defrost units as required.

- Clean condenser coil fins with a fine bristle brush or vacuum
- Routinely check wiring harnesses for loose connections or broken insulation
- 

**Defrosting:** Frost cannot be avoided. It develops from moist air entering storage area when the door is opened. Frost forms on the cold evaporator on automatic defrost units and on the walls (evaporator) of a cold wall refrigeration system. When the frost

accumulation on the evaporator becomes too heavy, it acts as an insulator, which hinders the refrigeration efficiency.

- Excess frost or water on the interior of the unit should be removed or drained. Do not allow water to stand in the unit.

**Cold Wall (CW):** Cold Wall type units utilize the interior wall surface as the refrigeration evaporator. Frost accumulation will occur on all wall surfaces. The unit can be defrosted by conventional methods using a wooden paddle or plastic scraper. Care must be exercised to prevent damaging piping and control parts.

**Do not** use a sharp instrument to “chop” the frost from the interior surface as you may do irreparable damage.

**Auto-Defrost (AD):** Auto-Defrost (sometimes referred to as “electric defrost”) type unit utilize a evaporator with an electric defrost heating element to melt the frost off the evaporator coil. The defrost cycle is controlled by the defrost timer which energizes the defrost heating element. The defrost timer is located in the condensing unit compartment or control box. The control is pre-set to periodically place the system in a defrost cycle automatically every six (6) hours. The length of the defrost cycle is approximately 14 to 16 minutes. The timer used is adjustable to set for your specific requirements.

**Finish:** Schedule periodic cleaning of the unit interior and exterior. The unit can be cleaned with a mild detergent and water. **DO NOT USE** strong detergents, abrasive cleaners, or solvents, as they are likely to leave objectionable odors, which may be absorbed, by the ice. Do not use wax or polish on the interior for the same reason. Wash exterior surfaces with a mild soap and warm water applied with a soft sponge or cloth. Wax exterior to maintain appearance and to protect the finish just as you would an automobile.

## **Axle**

The safest and most proven suspension system available comes with springs and equalizers. This allows all four tires to remain in contact with the road. All two axle trailers come standard with electric brakes on the rear axle. (Hydraulic brakes are optional). Easy lube hubs allow you to grease bearings without disassembly.

## **Tires and Wheels**

White painted corrosion resistant wheels that exceed the rated capacity of the trailer are standard. Highest quality bias ply tires are used to match trailer capacity. These properly matched accessories eliminate possibilities of sway. Wheels are fastened adequately with five lug nuts. Check the lug nuts and tire pressures periodically for safe travel. Refer to the VIN plate for recommended tire pressure and tire size. Replace tires with identical size tires as was received on the trailer. **WARNING: Failure to follow these instructions may result in wheel loss which can cause injury or death! Torque wheel nuts to 90-120 ft. lbs. before first road use. Re-torque to 90-120 ft. lbs. after 10, 25, and 50 miles. Check periodically thereafter.** Rev. 4/17/06



### **Hitch Jack – Trailer Units**

A side wind tongue jack with foot is located at the hitch allowing for easy raising and lowering for hook-up and disconnect from your vehicle. Lubricate the gears periodically.

### **Safety Chains – Trailer Units**

6-foot safety chain with hooks is provided on all trailers. Examination of the chains and the welded connecting area should take place before each trip.

### **Signal, Stop, and Marker Lights – Trailer and Truck Bodies**

A standard 7-pin trailer light kit is used. Keep the electrical connector lubricated with an electrical lubricant. Always check lights before traveling.

### **Break-A-Way Kit – Trailer Units**

Another important safety feature is the Break-A-Way kit that in the event of the trailer coming detached from a vehicle, the Break-A-Way Kit powered separately from the pulling vehicle activates the trailer brakes. Check operation of the breakaway hitch before every move. **Note: The cable from the break-away-switch to the vehicle pulling the trailer should be slightly shorter than the safety chains so the trailer brakes will be activated prior to the chain activation.** Rev. 4/17/06

### **Hitch Assembly – Trailer Units**

Lubricating the ball coupling area of the hitch periodically is recommended to reduce friction and premature wear.

## **BODY**

### **Insulated Body**

The body is made with rock hard, high performance polyester prepainted sheetmetal exterior wall surface and galvanized G90 interior wall surface insulated with CFC-free foamed-in-place polyurethane. The floor is made with three 7" wide channels spaced for standard pallets, with 22 Ga. G90 galvanized sheetmetal and robust slip resistant diamond plate aluminum.

### **Door, Gasket and Frame**

Door openings are formed with a recessed type PVC channel allowing the door to be recessed into the opening providing a rigid, well-insulated entry. The door has a magnetic gasket providing a positive seal. Gaskets should be checked for tears or any other problems that would cause loss of seal. Replace torn/worn gaskets to maintain correct temperature and refrigeration efficiency. Hinges exposed to harsh environmental conditions may require a lubricant for ease of operation. Spray light penetrating oil on the spring loaded hinge cartridge to extend the hinge life.

**Door Hinges and Lock**

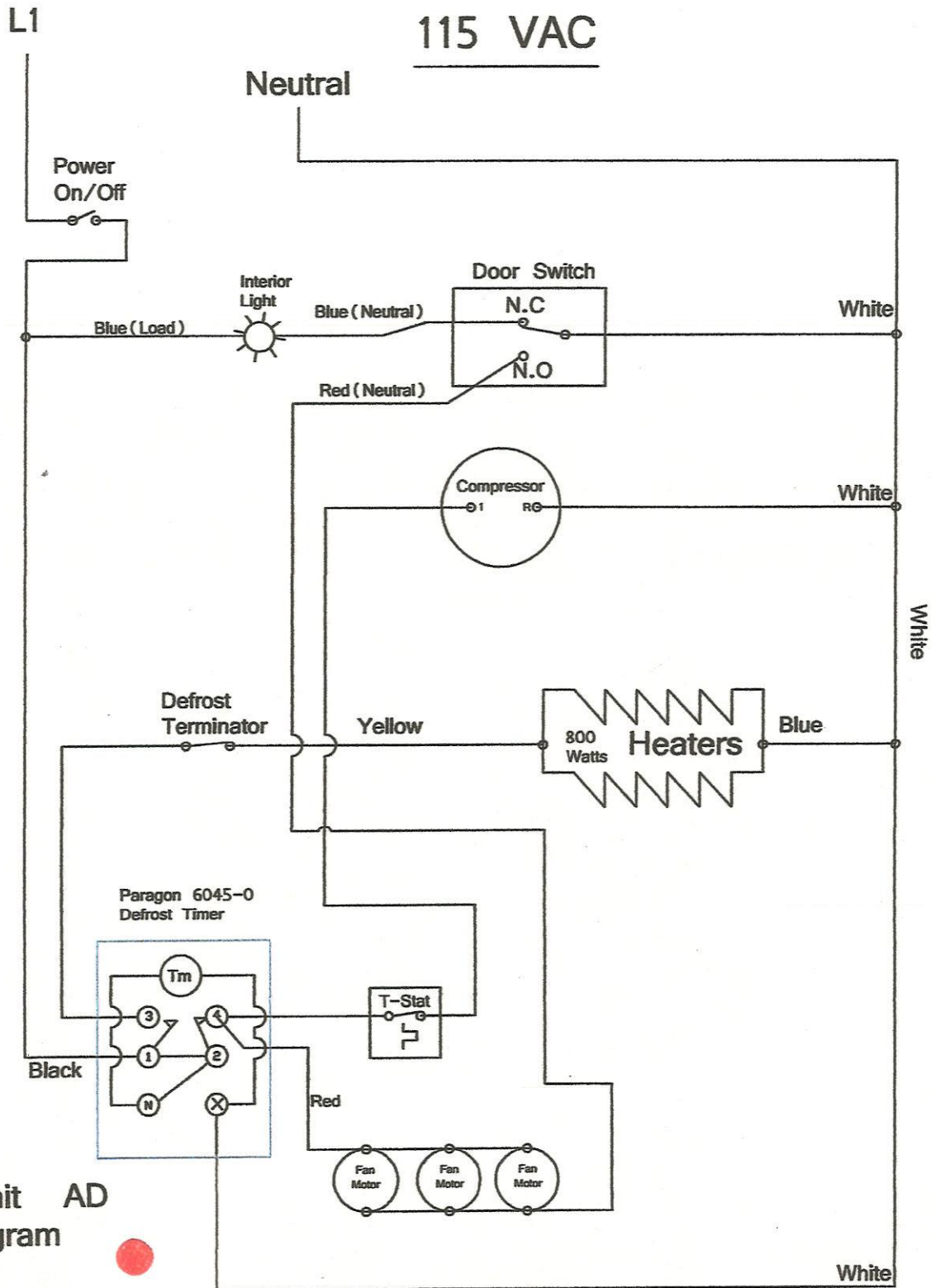
Maintenance free heavy-duty hinges are fastened to the body with stainless steel bolts into 1/4" thick aluminum angle extending the full height of the door opening. Hinges are mounted to the door with stainless steel bolts into 1/4" plate. Doors have padlockable feature, inside safety release and they swing open 180° offering clear entry into the body.

**Interior and Auxiliary Lighting**

Both 12 volt (optional) and 120 volt interior lighting is supplied on the interior of the trailer. The 120V lighting is activated as the door is opened. For 12-volt use, a separate switch must be activated. An optional spotlight is available for exterior lighting.

**Body Mounting**

Trailer bodies are mounted securely between the 1/4" x 2" x 4" tubular frame of the trailer with 1/2" diameter bolts. Robust 1/4" aluminum angle wall bumpers are used at each side of the interior floor where the bolts extend through to the heavy angle iron supports of the trailer. A drawing showing hole patterns for mounting transport units to the trailer or truck is included with this manual.



Transport Unit AD  
 Wiring Diagram  
 Rev 3/9/11  
 Chris McCannon  
 Part#0002199  
 ECR#0000060

115 VAC

L1

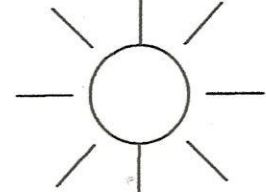
Neutral

Ground

Power  
On/Off

Compressor

T-Stat



Transport Unit CW

Wiring Diagram

Rev 2/24/11

Chris McCannon

Part #0003034

## AUTOMATIC DEFROST TROUBLESHOOTING GUIDE

If refrigerant valves must be opened, a qualified technician should be notified to perform the work.

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Ice is melting</b>	Power switch is in OFF position	Turn switch to ON position.
	Ice bags are blocking air flow	Move ice bags accordingly.
	Thermostat setting	Normal setting is between +10° and +20° F on the dial. Jump terminals on thermostat to check, if unit starts, replace thermostat.
	Evaporator fan motors are operating but the fan blade is not turning	Check to see if fan blade is slipping on the motor shaft.
	Condenser coil is dirty	Clean condenser.
	Incorrect refrigerant charge	Check sight glass for bubbles indicating wrong charge. Add refrigerant. Locate refrigerant leak.
	Condenser fan motor and compressor are not running	Check power supply. Check if defrost timer is stuck in defrost mode. Check if compressor is hot, this may indicate that condenser fan motor has failed causing thermal overload on compressor to trip.
	Condenser fan motor is not operating	Check electrical power to motor.
	Compressor is not operating	Check electrical power, relay, overload protector, start capacitor and compressor motor.

## **AUTOMATIC DEFROST TROUBLESHOOTING GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Ice is melting</b>	Evaporator fan motor not running	Check power supply to motor Check for faulty fan motor
	Check for ice build-up on the evaporator coil	Check power to defrost heater Check defrost heater for heat Check defrost termination thermostat Check defrost timer

## COLD WALL TROUBLESHOOTING GUIDE

If refrigerant valves must be opened, a qualified technician should be notified to perform the work.

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Ice is melting</b>	Power switch is in OFF position	Turn switch to ON position
	Thermostat setting	Thermostat should be set between +10° and +20° F.
	Condenser coil is dirty	Clean condenser
	Incorrect refrigerant charge	Check sight glass for bubbles indicating wrong charge. Add refrigerant. Locate refrigerant leak.
	Condenser fan motor and compressor are not running	Check power supply. Check if thermostat has failed. Check if compressor is hot which may indicate that the condenser fan motor has failed causing the thermal overload in the compressor to trip.
	Condenser fan motor is not operating	Check electrical power to motor
	Compressor is not operating	Check electrical power to compressor. Check relay, overload protector and start capacitor. Check compressor motor.
	Check thermostat setting	Thermostat should be set between 4 and 6
	Check refrigerant charge	Adjust if necessary

## REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Compressor will not start (no hum)</b>	Be sure power is being supplied to the unit.	Check power cord Check plug in Check breaker switch
	Ambient colder than thermostat setting	Adjust thermostat if necessary
	Unit is in defrost	Allow defrost cycle to complete, usually 15-20 minutes, or turn manual control on defrost
	Overload protector stuck in open position	Replace overload protector
	Thermostat stuck in open position	Replace thermostat
	Wiring improper or loose	Check actual wiring against diagram
<b>Compressor will not start (hums, but trips on overload protector)</b>	Improperly wired	Check actual wiring against diagram
	Low voltage to unit	Check power supply. Contact Power Company
	Starting capacitor defective	Replace start capacitor
	Relay failing to close	Determine reason and correct or replace



## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Compressor will not start (hums, but trips on overload protector)</b>	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor
<b>Compressor starts, but does not switch off of start winding</b>	Improperly wired	Check wiring against diagram
	Low voltage to unit	Determine reason and correct
	Relay failing to open	Determine reason and correct or replace
	Compressor motor has a winding open or shorted	Replace compressor
	Internal mechanical trouble in compressor	Replace compressor

## REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Compressor starts and runs, but short cycles on overload protector</b>	Low line voltage to unit	Check power supply Contact Electric Company
	Overload protector defective	Replace overload protector
	Starting capacitor defective	Replace start capacitor
	Excessive discharge pressure	Check ventilation, restrictions in cooling medium, restrictions in refrigeration system
	Compressor too hot - return gas hot	Check refrigerant charge (fix leak) add refrigerant if necessary
	Compressor motor has a winding shorted	Replace compressor
<b>Compressor runs a long time or continuous</b>	Dirty condenser	Clean condenser
	Refrigerated space has excessive load.	Reduce load. Check for open door or bad door gasket.
	Evaporator coil iced	Defrost
	Thermostat contacts stuck in closed position	Replace thermostat
	Shortage of refrigerant	Fix leak, add charge

## REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Starting Capacitor open</b>	Relay contacts not closing	Replace relay
	Prolonged operation on start cycle due to low line voltage	Determine reason and correct
	Prolonged operation on start cycle due to improper relay	Replace relay
	Excessive short cycling (Compressor starts and runs for a short cycle)	See “Compressor starts and runs, but short cycles on on overload protector” section
<b>Relay defective or burned out</b>	Line voltage too high or too low	Determine reason and correct
	Excessive short cycling	Determine reason and correct (see Compressor starts and runs but short Short cycles)
	Relay being influenced by loose vibrating mounting	Remount relay rigidly

## **REFRIGERATION and ELECTRICAL DIAGNOSTIC GUIDE - continued**

<b><u>Problem</u></b>	<b><u>Possible Cause</u></b>	<b><u>Solution</u></b>
<b>Warm refrigerated storage space</b>	Thermostat setting too high	Adjust thermostat
	Inadequate air circulation	Improve air circulation
<b>Suction line frosted</b>	Evaporator fan not running	Determine reason and correct
	Overcharge of refrigerant	Correct charge
<b>Liquid line frosted</b>	Restriction in drier	Replace drier
<b>Condensing unit noisy</b>	Loose parts or mountings	Find and tighten
	Tubing rattle	Apply sponge rubber between parts (Armaflex)
	Bent fan blade causing vibrations	Replace blade
	Fan motor bearings worn	Replace motor

**POLAR EXPRESS ICE TRANSPORTER  
REFRIGERATION DATA AND SPECIFICATIONS**

**R404A system**

**Automatic Defrost**

\* Actual minimum amp draw may vary.

Model	HP	Condensing Unit	Coil	Metering Device	Defrost Heater	Refrigerant Type	Charge Ounces	Min. Amps*	Volts	Max. Amps
3' x 7'	1/2	Danfoss	2 fan	TX Valve	400w	404a	18	14.3	110V	20
4' x 8'	1/2	Copeland	3 fan	TX Valve	600W	404A	64	22.2	115V	30
5' x 9'	3/4	Copeland	3 fan	TX Valve	800W	404A	64	22.2	115V	30
5' x 10'	3/4	Copeland	3 fan	TX Valve	800W	404A	64	22.2	115V	30
7' x 12'	3/4	Copeland	3 fan	TX Valve	800W	404A	64	22.2	115V	30
7' x 16'	3/4	Copeland	3 fan	TX Valve	800W	404A	64	22.2	115V	30

**POLAR EXPRESS ICE TRANSPORTER  
REFRIGERATION DATA AND SPECIFICATIONS**

**R404A system**

**Cold Wall**

\* Actual minimum amp draw may vary.

Model	HP	Condensing Unit	Metering Device	Refrigerant Type	Charge Ounces	Min. Amps*	Volts	Max. Amps
3' x 7'	1/2	Danfoss	TX Valve	404A	18	13.1	110V	15
4' x 8'	1/2	Copeland	TX Valve	404A	64	19.4	115V	30
5' x 9'	3/4	Copeland	TX Valve	404A	64	22.2	115V	30
5' X 10'	3/4	Copeland	TX Valve	404A	64	22.2	115V	30

## Trailer Tips

**Tip #1:** Always make sure the tires on your trailer are inflated to the proper air pressure as specified by the tire manufacturer.

**Tip #2:** Check wheel fastener torque frequently. Each time a wheel is removed and re-mounted, the lug nuts should be checked and re-tightened after ten (10) miles, twenty five (25) miles and fifty (50) miles and periodically thereafter.

**Tip #3:** Use the proper wheel fastener and torque range as specified by the wheel manufacturer. Excessive torque can permanently damage the wheel while insufficient torque can result in stud failure.

**Tip #4:** Remember to inspect and service wheel bearings regularly as stated in your Operation & Maintenance Service Manual.

**Tip #5:** Use the proper bearing adjustment method as stated your Operation & Maintenance Service Manual to assure reliable, long life performance.

**Tip #6:** Wheels and tires must be properly matched to each other to ensure safe, reliable performance.

**Tip #7:** Do not exceed the capacity of your trailer's running gear. Overloading can seriously degrade the life of the various components, result in unsafe braking and may lead to catastrophic failure.

**Tip #8:** When using after-market wheels, make sure that they fit properly and that the wheel studs are long enough to ensure proper thread engagement.

**Tip #9:** Remember to have your tires rotated and balanced according to the tire manufacturer's recommendations.

**Tip #10:** Check your brakes before every use to make sure they are functioning properly.

**Tip #11:** It is very important to pull your trailer so that it is running level. If the hitch is too high or too low, the trailer axle(s) may be unevenly loaded and can result in premature tire or axle failure.

**Tip #12:** Inspect your emergency breakaway devices to make sure they are in good working order before each use.

**Tip #13:** When loading your trailer, make sure enough weight is being carried on the hitch to ensure proper weight distribution and good handling.

**Tip #14:** Never fix an air leak of your wheel by putting a tube in the tire. The only safe solution for a leaky wheel is to replace it.

**Tip #15:** Support the back of the trailer at the ramps when loading up equipment or vehicles to prevent overloading the rear axle.

**Tip #16:** Remember to use recommended safety tools, personal protection, and procedures when servicing your trailer.

**Tip #17:** Follow the trailer manufacturer's guidelines for lifting and supporting trailer when servicing running gear.

**Tip #18:** Use caution when servicing brakes since some lining materials can contain asbestos.

**Tip #19:** Remember to lubricate the moving parts in your brake per the manufacturer's recommendations. Proper maintenance will prevent them from seizing up. Do not allow grease or oil to contaminate the linings, drum surfaces or magnets.

**Tip #20:** The Gross Axle Weight Rating (GAWR) of your running gear is determined by the lowest rated component in the assembly. The capacity of the wheel, tire, axle, brake, springs, rubber and hub are all considered.

**Tip #21:** The location of the load on a trailer will affect the ride characteristics. Too little load on the hitch can cause the trailer to wander or sway. Too much hitch load can overload your towing vehicle's suspension.

**Tip #22:** If you experience uneven tire wear, it is important to note the type and nature of the wear pattern in order to determine the cause. Contact your tire dealer to assist in troubleshooting the problem.

**Tip #23:** Spread axle mounting will lend support to frame structure but will result in more tire wear from side scrubbing when negotiating sharp turns or corners.

**Tip #24:** Axles should be spaced far enough apart to allow a minimum of 1" clearance between the tires. More space would be required if tire chains are to be used.

**Tip #25:** Widest possible track and axle mounting provides the best design for stability, especially when hauling high center of gravity loads.

**Tip #26:** Bump clearance is the distance from the top of a leaf spring mounted axle to the bottom of the frame. If this distance is too small the axle may come in contact with the frame and result in damage to axle.

**Tip #27:** Make sure there is enough clearance around the sides and top of the tires to prevent the tire from rubbing on the frame or other trailer structure.

**Tip #28:** Oil lubricated bearings are best suited for trailers that are used continuously. Grease will provide better protection for bearings during long periods of storage.

**Tip #29:** Axles fitted with Dual wheels should never be operated with only one wheel in place or with one of the two tires flat. Doing so can seriously overstress the wheel bearings and result in bearing failure.

**Tip #30:** Mixing aluminum wheels and steel dual wheels will result in galvanic corrosion between the two dissimilar metals. This corrosion can cause wheels to loosen and possibly result in stud failure and wheel run-off.

**Tip #31:** Replace brake shoes if the linings have been contaminated with oil or grease, are less than 1/16" thick, or are abnormally scored or gouged. Minor cracks in linings are not detrimental unless chunks of the linings are missing.

**Tip #32:** Remember that your new brake shoes need to be burnished or "seated in". This process may take quite a few stops to get the shoes fully worn in before maximum brake performance can be achieved.



## Frequently Asked Questions

### **BEARINGS - How often should I grease the bearings?**

Along with bearing adjustment, proper lubrication is essential to the current function and reliability of your trailer axle. Bearings should be lubricated every 12 months or 12,000 miles.

### **BEARINGS - What is the proper bearing adjustment procedure and recommended grease?**

Please review the Dexter Service Manual for instructions and specifications relating to bearing adjustment and lubrication. **WARNING:** It is important to NOT mix different types of grease thickeners. The grease that Dexter Axle uses has a Lithium Complex thickener. Mixing our grease with a Barium, Calcium, Clay, or Polyurea soap based thickener agent will cause adverse affects. This may include causing the two greases to harden, separate, become acidic, or pose other hazards and damage to the bearings.

### **BRAKES - How often should I adjust my brakes?**

Dexter recommends that manual adjust brakes should be adjusted . . . 1) After the first 200 miles of operation when the brake shoes and drums have "seated" 2) At 3,000 mile intervals 3) Or as use or performance requires.

### **BRAKES - Why aren't my electric brakes working?**

Most electric brake malfunctions that cannot be corrected by either brake adjustment or synchronization adjustments of your brake controller, can generally be traced to electrical system failure. Mechanical causes are ordinarily obvious (i.e. bent/broken parts, worn out linings or magnets, seized lever arms or shoes, scored drums, etc.). A voltmeter and ammeter will be essential tools for proper troubleshooting of electric brakes. **NOTE:** After replacing your brake shoes and magnets you will experience a decrease in braking performance until the components have worn into the drum and finished the burnishing process. This process requires many stops to bring the new shoe's performance back to normal. This may take more than 100 stops to finish this break-in period with stops of 20 mph decreases in speed. Please refer to the Dexter Service Manual for detailed troubleshooting instructions to further determine the cause of poor brake performance.

### **BRAKES - Why can't I lock and slide my electric brakes?**

On an unloaded trailer, you may be able to lock up your brakes if your electric brake controller is supplying full amperage to the brakes. When loaded to capacity, you may not be able to lock your brakes as electric brakes are designed to slow the trailer at a controlled rate, and not designed to lock up the wheels on a fully loaded trailer. Our brakes are designed to meet all applicable safety standards. All of our brakes will perform better after numerous burnish stops to seat the brake linings to the drums.

**BRAKES - Why do I have to adjust my brakes?**

Brakes must be adjusted to compensate for the lining and drum wear that occurs during the use of the braking system. Some brakes require manual adjustment to move the linings closer to the drum. Refer to the brake adjustment section of the OPERATION MAINTENANCE MANUAL for your style of brakes. Other brakes may have an automatic brake adjuster such as the automatic slack adjusters for air brakes.

**BRAKES - Why do my brakes and hubs get so hot?**

Braking systems use friction to slow the vehicle and the energy used to slow the trailer is converted to heat. Dexter brakes are designed to operate up to extremely high temperatures during hard braking application. This heat is noticeable on the hub and drums and is to be normally expected on a properly functioning brake. If a brake is malfunctioning and running excessively hot, this can be noticed by smoking brakes or the paint burning off of the brake drum.

**TOWING - How do I determine hitch weight?**

The hitch weight for conventional, bumper type hitches should be 10-14% of the gross weight of the vehicle. The remaining 86-90% of the load will be carried on the running gear. The hitch weight for 5th wheel and gooseneck type trailers should be 15-20% of the gross weight of the vehicle, with the remaining 80-85% of the load being carried on the running gear.

**WHEELS & TIRES - Can I change to aluminum wheels?**

Aluminum wheels are thicker through the mounting bolt area and may not leave enough stud length for proper nut engagement. Consult the wheel manufacturer for stud length and mounting face requirements and wheel nut torque.

**WHEELS & TIRES - Can I use wheels with greater offsets?**

Wheel offset is the distance from the mounting surface to the centerline of the tire. Dexter Axle bearing sets are designed for wheel with 0 to ½" inset. Exceeding this offset will shorten bearing life and may lead to dangerous bearing failure.

**WHEELS & TIRES - What tires can I use on these wheels?**

Wheels and tires must be matched. The wheel will have a label stating it's rim diameter, width and contour. The tire selected must be approved by the Tire and Rim Association for use on that particular size wheel. The tire capacity selected should not exceed the capacity rating of the wheel. The tire inflation pressure must not exceed the pressure rating of the wheel. **WARNING** - The use of tires that are not approved for use on a wheel could result in explosive separation of the tire and wheel and could cause a serious accident.

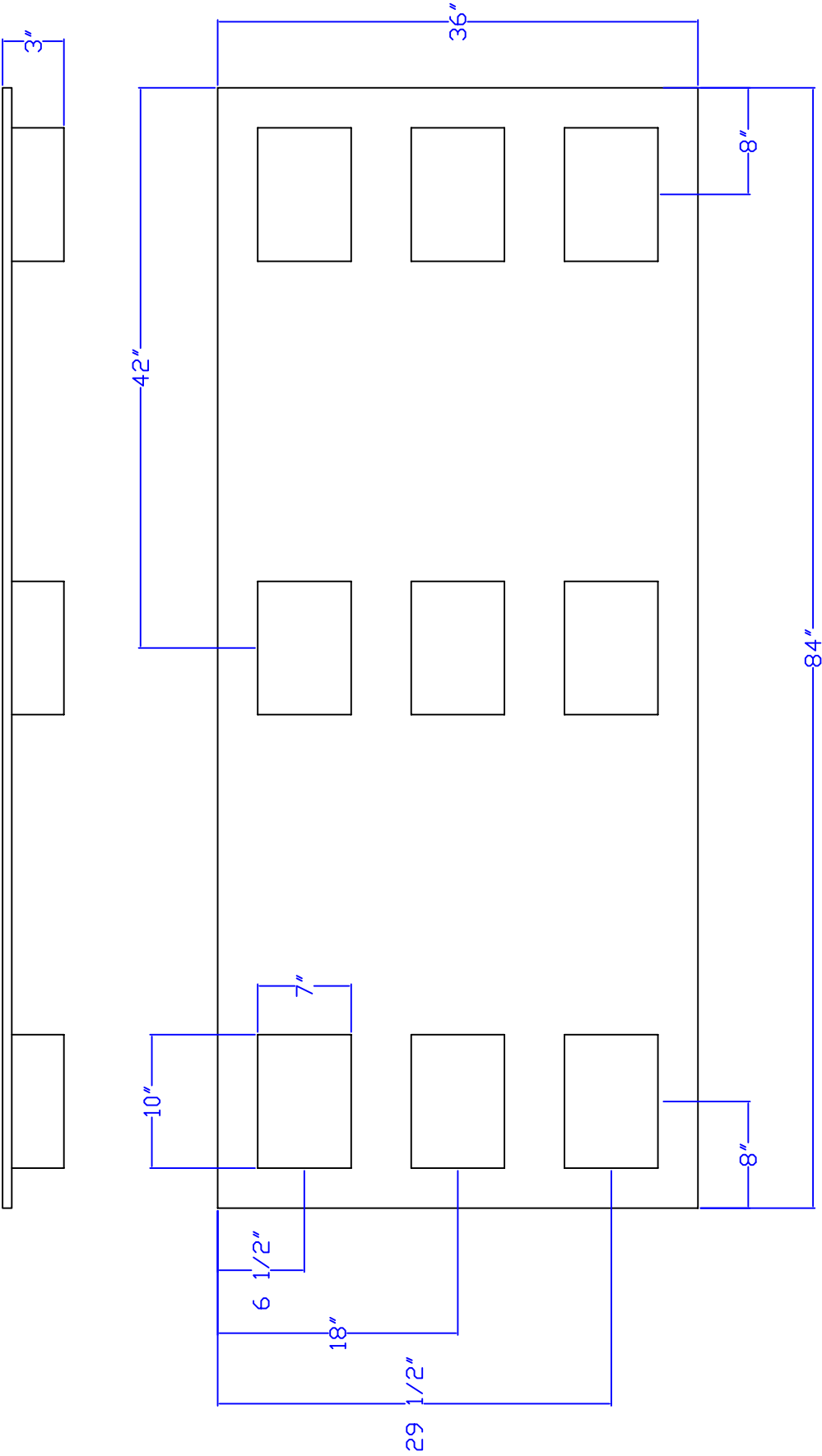
**WHEELS & TIRES - Why do I need to re-torque my trailer wheels when I don't do that on my truck?**

Trailer wheels carry substantially more weight than tow vehicle wheels of the same size and see more disc flexing due to side loading stresses. It is necessary to re-torque them several times until the wheel nut torque stabilizes. This is especially true for new wheels that need to have the paint worn away at the hub mounting face and under the wheel nuts.

**WARNING:** Be very careful to use only the recommended wheel fastening torque amount as specified for that wheel and fastener. It is possible to permanently damage a wheel that has been over torqued and may cause the loss of that wheel from the trailer.

For additional information go to  
[www.dexteraxle.com](http://www.dexteraxle.com)

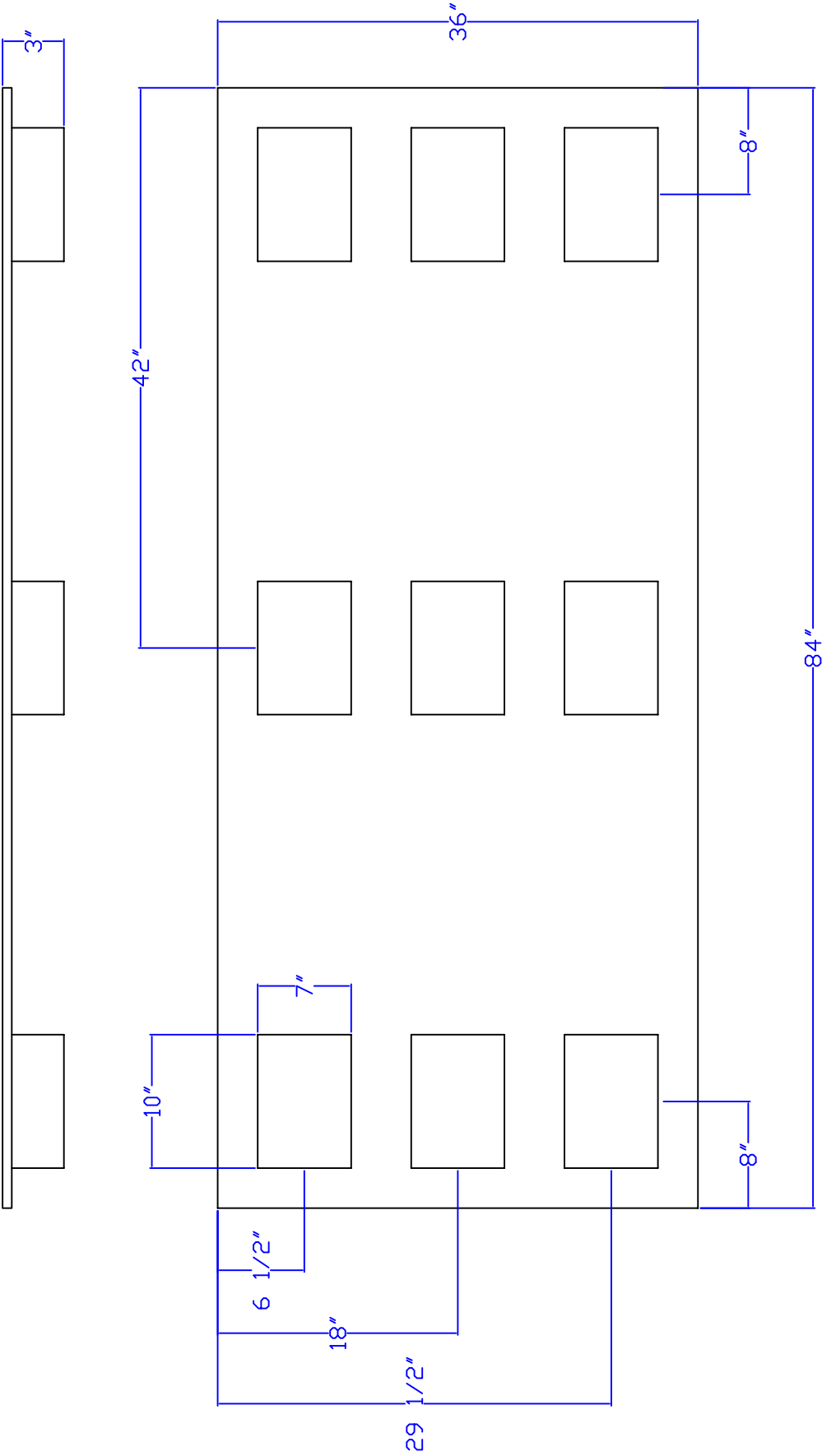
3' x 7' ICE TRAILER  
FLOOR SUPPORTS



Part Description:
3'x7' Floor Supports
Drawing Number:
0003037
Drawn By: C.Mc
Date:2/24/11
Scale:None

Polar Temp
Ice Merchandisers

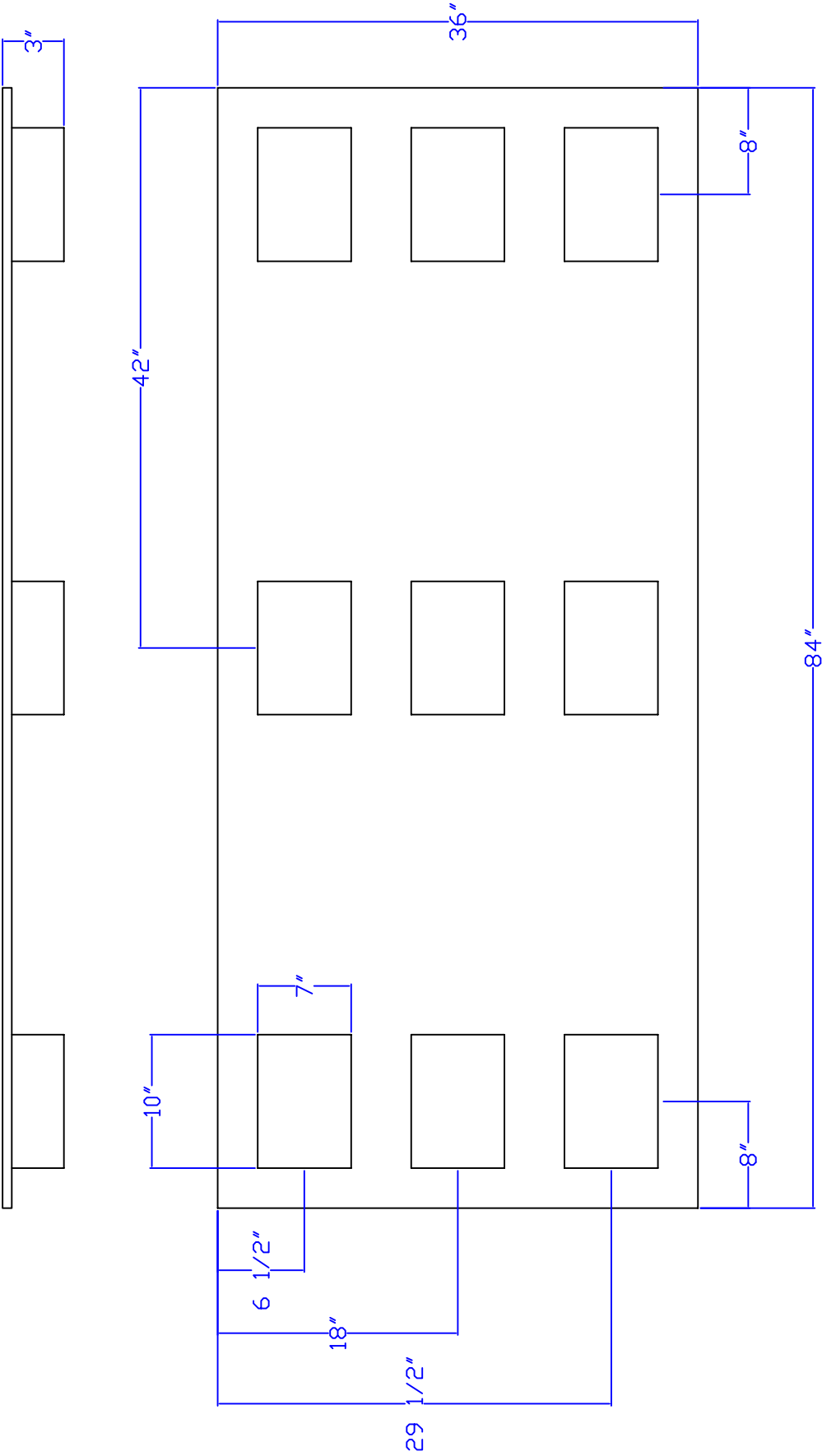
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Technical drawing of a rectangular table. The main drawing shows a table with a length of 84" and a width of 36". The table has a central panel and two side panels. The central panel is 42" wide and 29 1/2" high. The side panels are 10" wide and 18" high. The table has a 3" thick top edge. The drawing includes dimensions for the table's overall size and the placement of the side panels.

Dimensions shown in the drawing:

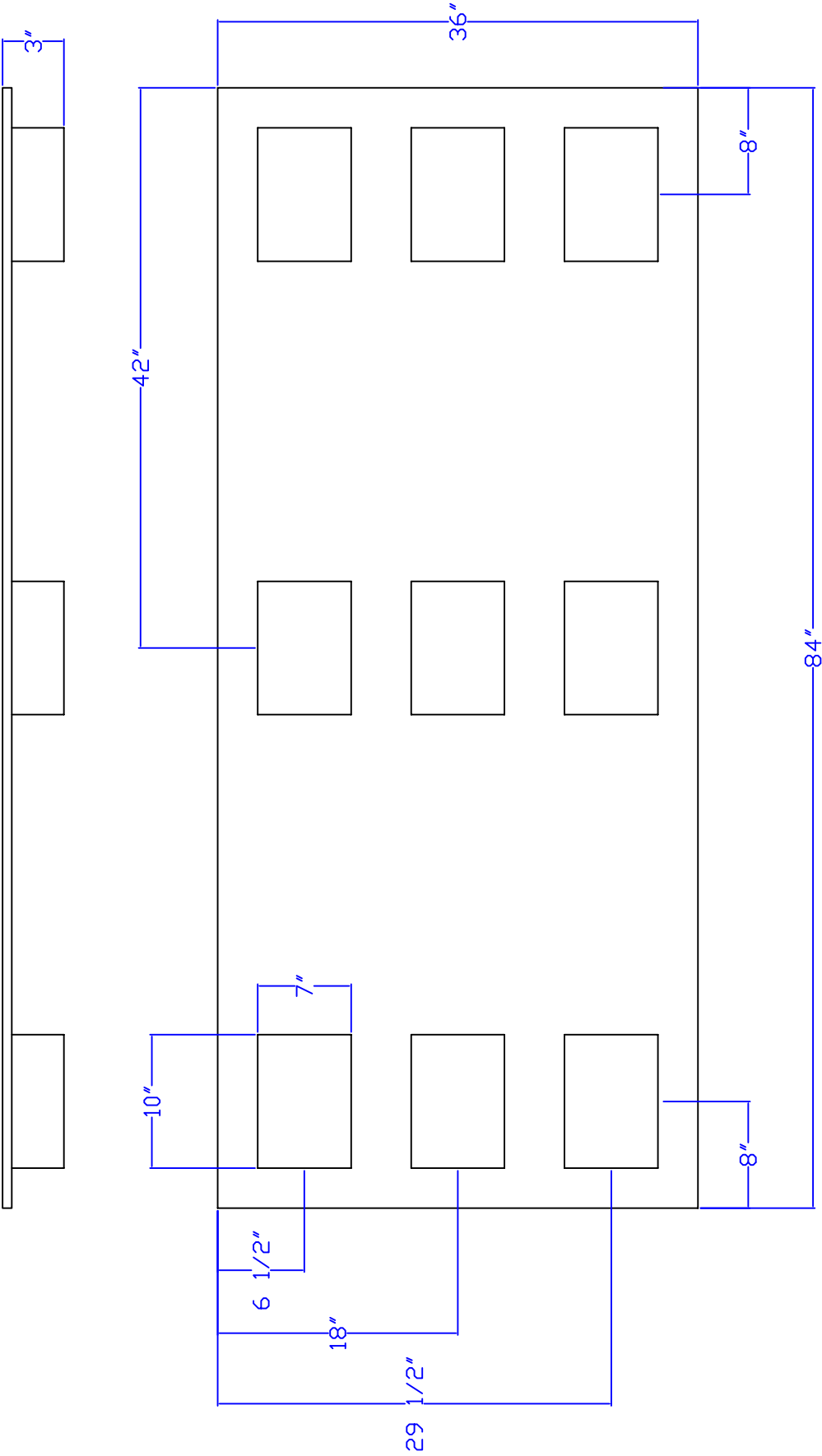
- Overall length: 84"
- Overall width: 36"
- Central panel width: 42"
- Central panel height: 29 1/2"
- Side panel width: 10"
- Side panel height: 18"
- Table top thickness: 3"
- Distance from side panel to central panel: 6 1/2"
- Distance from central panel to side panel: 7"
- Distance from side panel to table edge: 8"

Part Description:
3'x7' Floor Supports
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Polar Temp

Ice Merchandisers

3' x 7' ICE TRAILER  
FLOOR SUPPORTS

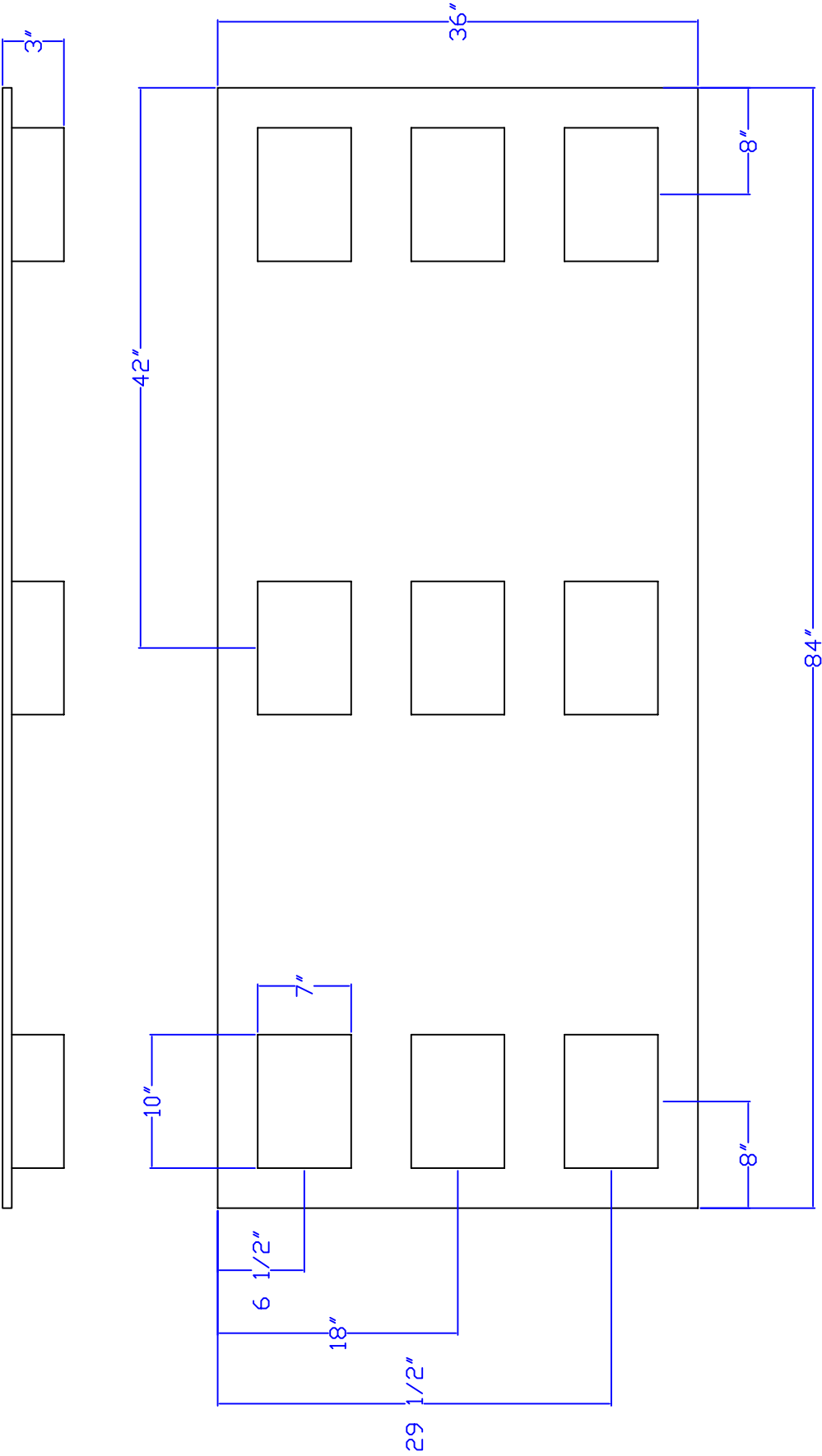


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Polar Temp  
Ice Merchandisers



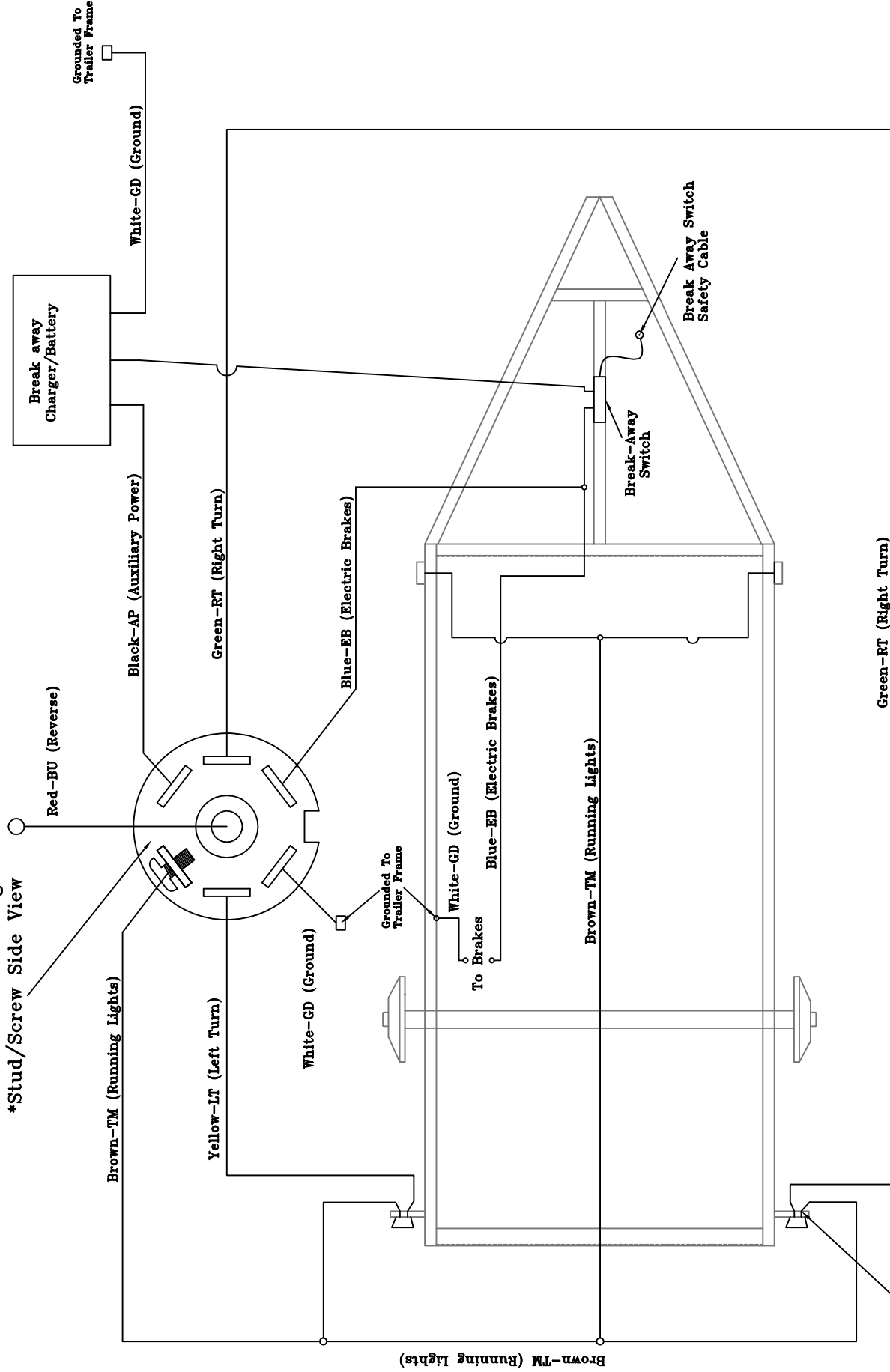
3' x 7' ICE TRAILER  
FLOOR SUPPORTS



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3'x7' Floor Supports
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Drawn By: C.Mc
Date:2/24/11
Scale:None

Polar Temp
Ice Merchandisers

Plug  
\*Standard 7-Pin Plug  
\*Stud/Screw Side View



Lights  
\*Actual Mounting  
Screws Used as  
Ground

Brakes  
\*Two White Leads From Brakes,One  
Ground,One Power  
\*Brakes Must be Grounded To Operate  
\*If Brakes Lock,Adjust Brake Controller.

Part Description:
Trailer Wiring
Drawing Number:
Part Number:0003044
Drawn By: C.Mc
Date:3/7/11
Scale:None

Polar Temp

Ice Merchandisers

## **POLAR TEMP TRANSPORT, TRUCK BODY and PALLLET LOAD UNIT POLICY**

### **Warranty**

Seller warrants the goods sold to be free from defects in materials and workmanship, under normal conditions and use for the following period of time:

**Compressor** – five (5) years from the original date of shipment

**Merchandiser Parts** – one (1) year from the original date of shipment

**Labor** – 60 days (Purchaser's authorized service technician must contact factory for approval).

This warranty applies to goods installed in the continental United States, Canada and the Caribbean Islands only. Seller's sole obligation under this warranty shall be limited to repair or replacement of any part or parts of said goods, F.O.B. Seller's factory which proves defective within the applicable warranty period. Seller reserves the right to inspect allegedly defective goods and to require the return, at the Buyer's expense, of goods for the purposes of inspection. This warranty shall not apply to any good, or any part thereof, which has been subject to any accidents or negligence or abuse of misuse, alteration or detrimentally affected its physical condition, use or operation qualities.

### **Parts Orders**

Please order parts by Polar Temp part number as listed in the replacement parts catalog. Call Polar Temp factory sales location for replacement parts catalog. Always have available the model and serial number of the cabinet, and in some cases the manufacturers name and model number of the part. In case of warranty replacement this information is required. Parts will not be issued as warranty or warranty authorized without this information.

### **Method of Shipment**

Every shipment is carefully packed for domestic shipment and labeled to prevent damage or loss in transit. Specify where shipment should be sent, freight, express, parcel post, airfreight or united parcel. If no preference is given, or in case of freight shipment, the routing is not furnished, shipment will be made according to our discretion without liability of any kind on our part for each selection. We welcome your suggestions on preferred carriers for better service.

Common carrier shipments are forwarded freight collect. Under pre-approved circumstances, where transportation charges are prepaid, they will be added to the invoice. Please note that prepaid freight charges are subject to sales tax if a signed sales tax exemption certificate is not on file with Polar Temp. All UPS shipments will be prepaid and added to the invoice.

## **POLAR EXPRESS ICE TRANSPORTER POLICY**

### **Ship Dates**

Promise of delivery represents only our best estimate of the time required completing the work and shipping the product from our plant. Orders are accepted with the understanding that shipping dates are approximate and subject to change because of factory conditions, fires, supplier delays, material shortages, civil or military authority, mandatory priority and/or other causes beyond our knowledge or control.

### **Return Of Merchandise**

No returned merchandise will be accepted without prior authorization from Polar Temp. When orders have been correctly filled, and merchandise is returned, a 10% handling charge plus reconditioning charges, if any, will be applied. No return shipment will be accepted unless authorized in advance and the freight is prepaid. During the warranty period, in order to obtain proper credit from our vendors, all defective parts must be returned within 45 days, freight prepaid to our factory for repair, replacement or credit.

### **Pricing**

All prices listed are F.O.B. Lithia Springs and/or Austell, Georgia, and are subject to change without notice.

## **FACTORY SALES LOCATIONS**

Tennessee  
1-865-984-5945

Texas  
1-866-598-4206

North Carolina  
1-866-827-3232

California  
1-866-746-0437

Georgia  
1-770-945-2181

Colorado  
1-719-522-0955